Jack M. Gallup, MS Biochemistry, Assist. Scientist III

Specialty: Quantitative Reverse Transcriptase Real-Time PCR (qPCR)
Iowa State University qPCR Consultation Service
MS Biochemistry, Assistant Scientist III in Veterinary Pathology
Founder of the ISU qPCR Consultation Service
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Education

- BS/ACS (Chemistry), Minor (Biology) Mankato State University
- MS (Biochemistry), Iowa State University

Research

- Retinoid derivatives and cancer, Iowa State University
- Cathepsin B research, Iowa State University
- Mollusk gill enzyme kinetics, Iowa State University
- Innate immunity of the ovine lung, Iowa State University

Professional Affiliations

- Phi Zeta, honorary inductee 2009

Research Interests

- Treatment of tinnitus as a result of traumatic brain injury (TBI) with simple, FDA-improved micronutrients and/or dietary supplements that can be included in, or along with MREs
- Neurological basis of Ménière's disease
- Neurological basis of chemically-induced tinnitus
- Risk factors in the pathogenesis of auditory nerve diseases
- Correlation of structure and function of the auditory system
- Electronic analysis of the inner ear and related brain functions in the aftermath of TBI

Current Projects

- Designing and establishing a reliable operant conditioning system for a behavior-based proof-of-tinnitus mouse model using state- of-

the-art equipment and conditioning chambers. First using salicylate to induce tinnitus, then using a novel pressure chamber device to mimic TBI-induced tinnitus. Understanding the neuropathy involved in the generation of life-disturbing tinnitus; finding safe/simple dietary means to lessen the intensity of this and related conditions (collaboration with Dr. Sinisa Grozdanic, DVM, Ph.D. Iowa State University College of Veterinary Science and Randy H. Kardon, MD, Ph.D., University of Iowa Department of Ophthalmology and Visual Sciences).

- Role of VEGF isoforms, HIF1,2 and 3α and other downstream response elements in lung development and lung innate-immune function during ontogeny of the ovine lung in the face of RSV challenge and maternal exposure to ethanol and nicotine (collaboration with Dr. Mark R. Ackermann DVM, Ph.D. Iowa State University Department of Veterinary Pathology, et al.).
- qPCR Consultation Service using self-written software (ISURF #03407) to help qPCR users world-wide troubleshoot their qPCR assays from initial sample isolation through data analysis (I am the founder of this service at Iowa State University).

Current Funding (Federal)

- NIIAD NIHRO1062787. “R01 grant for which the major goals are to identify innate immune genes expressed by respiratory epithelia that protect against RSV preterm. Role: **Co-Investigator**